

## Chapter 2:

# THE EMERGENCE OF ENTREPRENEURSHIP POLICY

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## 1. INTRODUCTION

Perhaps one of the less understood phenomena accompanying the increased globalization at the beginning of the 21<sup>st</sup> century has been a shift in the comparative advantage of high-wage countries towards knowledge-based economic activity. An important implication of this shift in this comparative advantage is that much of the production and commercialization of new economic knowledge is less associated with large traditional corporations and more associated with high-tech entrepreneurial firms found in innovative regional clusters, such as Silicon Valley, Research Triangle and Route 122. Only a few years ago the conventional wisdom predicted that globalization would render the demise of small firms and the importance of geographic location. Yet the obsession of policy-makers around the globe to “create the next Silicon Valley” reveals the increased importance of entrepreneurial firms taking advantage of geographic proximity and regional agglomerations. The purpose of this paper is to explain why and how a new type of public policy has emerged—the strategic management of places—and the central role that entrepreneurship plays in this new policy.

## 2. WHAT IS ENTREPRENEURSHIP?

While it has become widely acknowledged that entrepreneurship is a vital force in the economies of developed countries, there is little consensus about what actually constitutes entrepreneurial activity. Scholars have proposed a broad array of definitions, which when operationalize, have generated a number of different measures (Hebert and Link, 1989). Herbert and Link (1989) have identified three distinct intellectual traditions in the development of the entrepreneurship literature. These three traditions can be characterized as the German Tradition, based on von Thunen and

Schumpeter, the Chicago Tradition, based on Knight and Schultz, and the Austrian Tradition, based on von Mises, Kirzner and Shackle. The Schumpeterian tradition has had the greatest impact on the contemporary entrepreneurship literature. The distinguishing feature from Schumpeter is that entrepreneurship is viewed as a disequilibrating phenomenon rather than an equilibrating force. In his 1911 classic treatise, *Theorie der wirtschaftlichen Entwicklungen* (Theory of Economic Development), Schumpeter proposed a theory of *creative destruction*, where new firms with the entrepreneurial spirit displace less innovative incumbents, ultimately leading to a higher degree of economic growth. Even in his 1942 classic, *Capitalism and Democracy*, Schumpeter (p. 13) still argued that entrenched large corporations tend to resist change, forcing entrepreneurs to start new firms in order to pursue innovative activity: "The function of entrepreneurs is to reform or revolutionize the pattern of production by exploiting an invention, or more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way...To undertake such new things is difficult and constitutes a distinct economic function, first because they lie outside of the routine tasks which everybody understand, and secondly, because the environment resists in many ways."

Despite the Schumpeterian emphasis on the process of starting a new enterprise as the defining entrepreneurial activity, there is no generally accepted definition of entrepreneurship for the developed countries of the OECD (OECD 1998). The failure of a single definition of entrepreneurship to emerge undoubtedly reflects the fact that it is a multidimensional concept. The actual definition used to study or classify entrepreneurial activities reflects a particular perspective or emphasis. For example, definitions of entrepreneurship typically vary between the economic and management perspectives. From the economic perspective, Hebert and Link (1989) distinguish between the supply of financial capital, innovation, allocation of resources among alternative uses and decision-making. Thus, an entrepreneur is someone encompassing the entire spectrum of these functions: "The entrepreneur is someone who specializes in taking responsibility for and making judgemental decisions that affect the location, form, and the use of goods, resources or institutions" (Hebert and Link, 1989: 213).

By contrast, from the management perspective, Sahlman and Stevenson (1991: 1) differentiate between entrepreneurs and managers in that, "entrepreneurship is a way of managing that involves pursuing opportunity without regard to the resources currently controlled. Entrepreneurs identify opportunities, assemble required resources, implement a practical action plan, and harvest the reward in a timely, flexible way."

The most prevalent and compelling views of entrepreneurship focus on the perception of new economic opportunities and the subsequent introduction of new ideas in the market. As Audretsch (1995) argues,

entrepreneurship is about change, just as entrepreneurs are agents of change; entrepreneurship is thus about the process of change. This corresponds to the definition of entrepreneurship proposed by the OECD, "Entrepreneurs are agents of change and growth in a market economy and they can act to accelerate the generation, dissemination and application of innovative ideas....Entrepreneurs not only seek out and identify potentially profitable economic opportunities but are also willing to take risks to see if their hunches are right" (OECD 1998: 11).

While the simplicity of defining entrepreneurship as activities fostering innovative change have its attraction, such simplicity also masks considerable complexity. Entrepreneurship is shrouded with complexity for at least two reasons. The first reason emerges because entrepreneurship is an activity crossing multiple organizational forms. Does entrepreneurship refer to the change inducing activities of individuals, groups of individuals such as networks, projects, lines of business, firms, and even entire industries, or even for geographic units of observation, such as agglomerations, clusters, and regions?

Part of the complexity involved with entrepreneurship is that it involves all of these types of organizational forms. No single organizational form can claim a monopoly on entrepreneurship.

The second source of complexity is that the concept of change is relative to some benchmark. What may be perceived as change to an individual or enterprise may not involve any new practice for the industry. Or, it may represent change for the domestic industry, but not for the global industry. Thus, the concept of entrepreneurship is embedded in the local context. At the same time, the value of entrepreneurship is likely to be shaped by the relevant benchmark. Entrepreneurial activity that is new to the individual but not the firm or industry may be of limited value. Entrepreneurial activity that is new to the region or country may be significant but ultimately limited. By contrast, it is entrepreneurial activity that is new across all organizational forms, all the way up to the global, that carries the greatest potential value.

Thus, one of the most striking features of entrepreneurship is that it crosses a number of key units of analysis. At one level, entrepreneurship involves the decisions and actions of individuals. These individuals may act alone or within the context of a group. At another level, entrepreneurship involves units of analysis at the levels of the industry, as well as at spatial levels, such as cities, regions and countries.

### **3. GLOBALIZATION AND THE STRATEGIC MANAGEMENT OF PLACES**

The role of entrepreneurship in society and has changed drastically over the last half century. During the post-World War II era, the importance of

entrepreneurship and business seemed to be fading away. While alarm was expressed that small business needed to be preserved and protected for social and political reasons, few made the case on the grounds of economic efficiency. This position was drastically reversed in recent years. Entrepreneurship has become the engine of economic and social development throughout the world. The role of entrepreneurship has changed dramatically between the traditional and new economies.

During the post-war period a generation of scholars spanning a broad spectrum of academic fields and disciplines devoted their research to identifying the issues involving this perceived trade-off between economic efficiency on the one hand and political and economic decentralization on the other. Scholars responded by producing a massive literature focusing on essentially three issues: (i) What are the gains to size and large-scale production? (ii) What are the economic welfare implications of having an oligopolistic market structure i.e. is economic performance promoted or reduced in an industry with just a handful of large-scale firms? and (iii) Given the overwhelming evidence that large-scale production resulting in economic concentration is associated with increased efficiency, what are the public policy implications?

This literature produced a series of stylized facts about the role of SMEs during the post-war economies in North America and Western Europe:

- (1) *SMEs were generally less efficient than their larger counterparts.* Studies from the U.S. in the 1960s and 1970 revealed that SMEs produced at lower levels of efficiency, leading Weiss (1976: 259) to conclude that, "On the average, about half of total shipments in the industries covered are from suboptimal plants. The majority of plants in most industries are suboptimal in scale, and a very large percentage of output is from suboptimal plants." Pratten (1971) found similar evidence for the United Kingdom, where suboptimal scale establishments accounted for 47.9 percent of industry shipments.
- (2) *SMEs provided lower levels of employee compensation.* Empirical evidence from both North America and Europe found a systematic and positive relationship between employee compensation and firm size (Brown, Hamilton and Medoff 1990, and Brown and Medoff 1989).
- (3) *SMEs were only marginally involved in innovative activity.* Based on R&D measures, SMEs accounted for only a small amount of innovative activity.
- (4) *The relative importance of SMEs was declining over time in both North America and Europe.*

In the post-war era, small firms and entrepreneurship were viewed as a luxury, perhaps needed by the west to ensure a decentralization of decision making, but in any case obtained only at a cost to efficiency. Certainly the systematic empirical evidence, gathered from both Europe and North

America documented a sharp trend towards a decreased role of SMEs during the post-war period.

Thus, it was particularly startling and a seeming paradox, when scholars first began to document that what had seemed like the inevitable demise of SMEs actually began to reverse itself starting in the 1970s. Loveman and Sengenberger (1991) and Acs and Audretsch (1993) carried out systematic international studies examining the re-emergence of SMEs and entrepreneurship in North America and Europe. Two major findings emerged from these studies – first, the relative role of SMEs varies systematically across countries, and secondly, in most European countries and in North America, SMEs began increasing their relative importance starting in the mid-1970s. In the U.S. the average real GDP per firm increased by nearly two-thirds between 1947 and 1980, from \$150,000 to \$245,000, reflecting a trend towards larger enterprises and a decreasing importance of SMEs. However, within the subsequent seven years, by 1987, it had fallen by about 14 percent to \$210,000, reflecting a sharp reversal of this trend and the re-emergence of SMEs (Brock and Evans 1989). Similarly, SMEs accounted for one-fifth of manufacturing sales in the U.S. in 1976, but by 1986 the small-firm share of sales had risen to over one-quarter (Acs and Audretsch 1990).

The reversal of the trend towards large enterprises towards the re-emergence of SMEs was not limited to North America. In fact, a similar trend was found to take in Europe as well. For example, in the Netherlands the business ownership rate fell during the post-war period, until it reached a trough of 0.085 in 1982. But this downward trend was subsequently reversed, rising to a business ownership rate of 0.10 by 1998 (Audretsch et al. 2002). Similarly, the small-firm employment share in manufacturing in the Netherlands increased from 68.3 percent in 1978 to 71.8 percent in 1986; in the United Kingdom from 30.1 percent in 1979 to 39.9 percent by 1986; in (West) Germany from 54.8 percent in 1970 to 57.9 percent by 1987; in Portugal from 68.3 percent in 1982 to 71.8 percent in 1986; in the North of Italy from 44.3 percent in 1981 to 55.2 percent by 1987, and in the South of Italy from 61.4 percent in 1981 to 68.4 percent by 1987 (Acs and Audretsch 1993). An EIM documents how the relative importance of SMEs in Europe (19 countries), measured in terms of employment shares has continued to increase between 1988 and 2001 (EIM 2002).

As the empirical evidence mounted documenting the re-emergence of entrepreneurship as a vital factor, scholars began to look for explanations and to develop a theoretical basis. The early explanations (Brock and Evans 1989) revolved around six hypotheses:

1. That technological change had reduced the extent of scale economies in manufacturing.
2. Increased globalization had rendered markets more volatile as a result of competition from a greater number of foreign rivals.

3. The changing composition of the labor force, towards a greater participation of females, immigrants, and young and old workers may be more conducive to smaller rather than larger enterprises, due to the greater premium placed on work flexibility.
4. A proliferation of consumer tastes away from standardized mass-produced goods towards stylized and personalized products facilitates niche small producers.
5. Deregulation and privatization facilitate the entry of new and small firms into markets that were previously protected and inaccessible.
6. The increased importance of innovation in high-wage countries has reduced the relative importance of large-scale production and instead fostered the importance of entrepreneurial activity.

More recently, Audretsch and Thurik (2001) have developed the explanation for the re-emergence of entrepreneurship in Europe and North America based on increased globalization, which has shifted the comparative advantage towards knowledge-based economic activity. Conventional wisdom would have predicted that increased globalization would present a more hostile environment to small business (Vernon 1970). Caves (1982) argued that the additional costs of globalization that would be incurred by small business “constitute an important reason for expecting that foreign investment will be mainly an activity of large firms”.

Certainly the empirical evidence by Horst (1972) showed that even after controlling for industry effects, the only factor significantly influencing the propensity to engage in foreign direct investment was firm size. As Chandler (1990) concluded, “to compete globally you have to be big.” Gomes-Casseres (1997: 33) further observed that, “[s]tudents of international business have traditionally believed that success in foreign markets required large size. Small firms were thought to be at a disadvantage compared to larger firms, because of the fixed costs of learning about foreign environments, communicating at long distances, and negotiating with national governments.”

According to Audretsch and Thurik (2001), SMEs did not become obsolete as a result of globalization, but rather their role changed as the comparative advantage has shifted towards knowledge-based economic activity. This has occurred for two reasons. First, large enterprises in traditional manufacturing industries have lost their competitiveness in producing in the high-cost domestic countries. Second, small entrepreneurial enterprises take on a new importance and value in a knowledge-based economy.

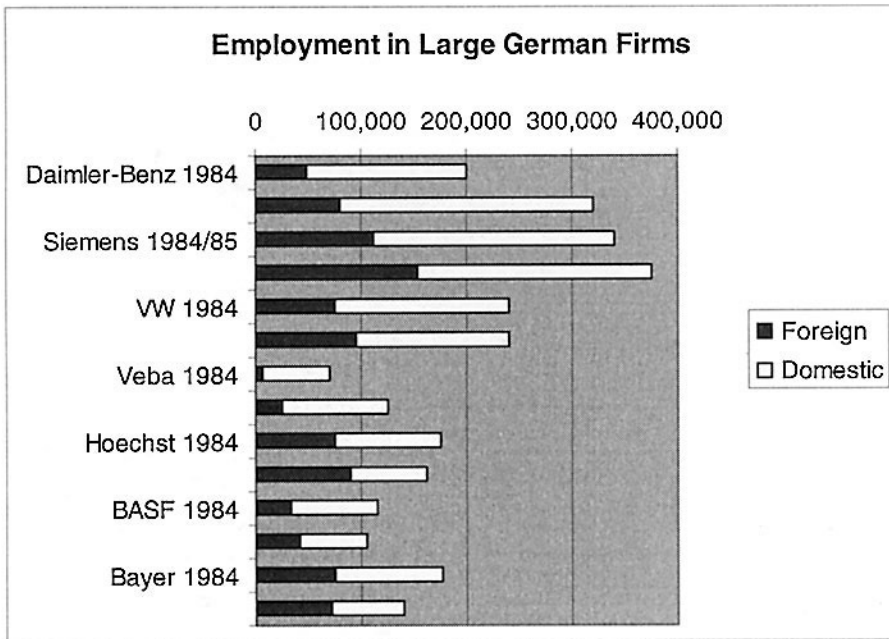
The loss of competitiveness by large-scale producers in high-cost locations is manifested by the fact that, confronted with lower cost competition in foreign locations, producers in the high-cost countries have three options apart from doing nothing and losing global market share: (1)

reduce wages and other production costs sufficiently to compete with the low-cost foreign producers, (2) substitute equipment and technology for labor to increase productivity, and (3) shift production out of the high-cost location and into the low-cost location.

Many of the European and American firms that have successfully restructured resorted to the last two alternatives. Substituting capital and technology for labor, along with shifting production to lower-cost locations has resulted in waves of *Corporate Downsizing* throughout Europe and North America. At the same time, it has generally preserved the viability of many of the large corporations.

The experience has not been different in Europe. Pressed to maintain competitiveness in traditional industries, where economic activity can be easily transferred across geographic space to access lower production costs, the largest and most prominent German companies have deployed two strategic responses. The first is to offset greater wage differentials between Germany and low-cost locations by increasing productivity through the substitution of technology and capital for labor. The second is to locate new plants and establishments outside of Germany. What both strategic responses have in common is that the German flagship companies have been downsizing the amount of employment in the domestic economy. For example, Siemens increased the amount of employment outside Germany by 50 percent, from 108.000 in 1984/85 to 162.000 in 1994/95. Over the same time period it decreased the amount of employment in Germany by 12 percent, from 240.000 to 211.000. Volkswagen increased the amount of employment in foreign countries by 24 percent, from 78.000 in 1984 to 97.000 in 1994. Over the same time period, it decreased employment in Germany by 10 percent, from 156.000 to 141.000. Similarly, Hoechst increased the number of jobs outside of Germany by 9 percent, from 78.925 in 1984 to 92.333 in 1994. The number of Hoechst employees in Germany fell over that same period by 26 percent, from 99.015 to 73.338. And BASF increased employment in foreign countries by 34 percent, from 29.966 in 1984 to 40.297 in 1994. Domestic employment by BASF fell by 17 percent over that same time period, from 85.850 to 65.969.

These examples are not isolated but rather typical of the wave of downsizing in Germany in the 1990s that has resulted in levels of unemployment—four million—not seen since the Second World War. As table 2.1 shows, between 1991 and 1995 manufacturing employment in German plants decreased by 1.307.000 while it increased in foreign subsidiaries by 189.000 (BMW 2000). In the chemical sector, the decrease of domestic employment was 80.000, while 14.000 jobs were added by German chemical companies in plants located outside of Germany. In electrical engineering employment in German plants decreased by 198.000. In automobiles employment in Germany decreased by 161.000, while 30.000 jobs were added outside of Germany.

Fig. 2.1: *Employment in large firms*

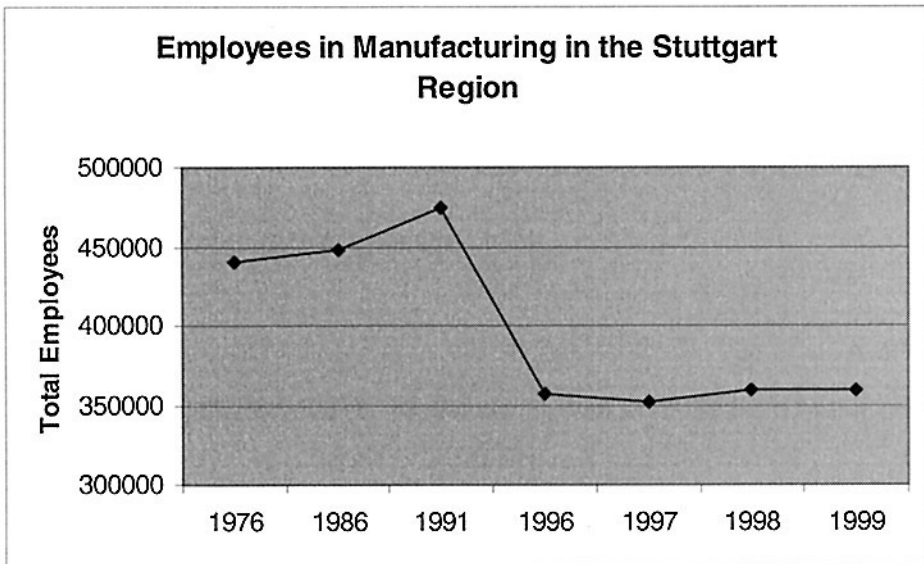
The German impact of corporate downsizing in Germany, in the 1990s, was registered not just by individual firms and industries but also by particular regions. For example, Stuttgart, which is home to Daimler-Chrysler (at the time Daimler-Benz), experienced an increase in manufacturing employment throughout the 1970s, 1980s, and into the 1990s. After reaching a peak of around 480.000 in 1991, manufacturing employment fell by more than one-third, to around 350.000 by the mid-1990s.

Tab. 2.1: *Change in employment figures in Western Germany and at foreign subsidiaries (1991-1995, in thousands)*

Employment Trend	Manufacturing	Chemicals	Electrical Engineering	Automotive	Mechanical Engineering	Textiles	Banking and Insurance
Foreign	+ 189	+ 14	- 17	+ 30	+ 16	- 6	+ 21
Domestic (West)	- 1.307	- 80	- 198	- 161	- 217	-68	+ 28

Source: BMWi 2000



*Fig. 2.2 Employees in manufacturing in the Stuttgart region*

This wave of corporate downsizing triggered cries of betrayal and lack of social conscience on the part of the large corporations. But it was a mistake to blame the corporations for this wave of downsizing that has triggered massive job losses and rising unemployment in so many countries. These corporations were simply trying to survive in an economy of global competitors who have access to lower cost inputs.

Much of the policy debate responding to the twin forces of the telecommunications revolution and increased globalization revolved around a perceived trade-off between maintaining higher wages but suffering greater unemployment versus higher levels of employment but at the cost of lower wage rates. There is, however, an alternative. It does not require sacrificing wages to create new jobs, nor does it require fewer jobs to maintain wage levels and the social safety net. This alternative involves shifting economic activity out of the traditional industries where the high-cost countries of Europe and North America have lost the comparative advantage and into those industries where the comparative advantage is compatible with both high wages and high levels of employment – knowledge based economic activity.

Globalization has rendered the comparative advantage in traditional moderate technology industries incompatible with high wage levels. At the same time, the emerging comparative advantage that is compatible with high wage levels is based on innovative activity. Thus, the regional response to globalization has been the emergence of strategic management policy – not for firms, but for places. As long as corporations were inextricably linked to their regional location by substantial sunk costs, such as capital investment,

the competitiveness of a region was identical to the competitiveness of the corporations located in that region. A quarter century ago, while the proclamation, “What is good for General Motors is good for America” may have been controversial, few would have disagreed that “What is good for General Motors is good for Detroit.” And so it was with U.S. Steel in Pittsburgh and Volkswagen in Wolfsburg. As long as the corporation thrived, so would the region.

As globalization has rendered not only the degree to which the traditional economic factors of capital and labor are sunk, but also shifted the comparative advantage in the high-wage countries of North America and Europe towards knowledge-based economic activity, corporations in traditional industries have been forced to shift production to lower-cost locations. This has led to a de-linking between the competitiveness of firms and regions. The advent of the strategic management of regions has been a response to the realization that the strategic management of corporations includes a policy option not available to regions – changing the production location.

#### **4. THE EMERGENCE OF ENTREPRENEURSHIP POLICY**

During the Post World War II era, there was considerable concern about what to do about the existing firms and industrial structure, but little attention was paid to where they came from and where they were going (Audretsch and Thurik 2001). Oliver Williamson’s classic 1968 article “Economies as an Antitrust Defense: The Welfare Tradeoffs,” became something of a final statement demonstrating what appeared to be an inevitable trade-off between the gains in productive efficiency that could be obtained through increased concentration and gains in terms of competition, and implicitly democracy, that could be achieved through decentralizing policies. But it did not seem possible to have both, certainly not in Williamson’s completely static model.

The fundamental policy issue confronting Western Europe and North America during the post-war era was how to live with this apparent trade-off between concentration and efficiency on the one hand, and decentralization and democracy on the other. The public policy question of the day was, *How can society reap the benefits of the large corporation in an oligopolistic setting while avoiding or at least minimizing the costs imposed by a concentration of economic power?* The policy response was to constrain the freedom of firms to contract. Such policy restraints typically took the form of public ownership, regulation and competition policy or antitrust. At the time, considerable attention was devoted to what seemed like glaring differences in policy approaches to this apparent trade-off by different countries. France and Sweden resorted to government ownership of private

business. Other countries, such as the Netherlands and Germany, tended to emphasize regulation. Still other countries, such as the United States, had a greater emphasis on antitrust. In fact, most countries relied upon elements of all three policy instruments. While the particular instrument may have varied across countries, they were, in fact, manifestations of a singular policy approach – how to restrict and restrain the power of the large corporation. What may have been perceived as a disparate set of policies at the time appears in retrospect to comprise a remarkably singular policy approach (Audretsch and Thurik 2001).

In Europe Servan-Schreiber warned of the “American Challenge” in the form of the “dynamism, organization, innovation, and boldness that characterize the giant American corporations” (1968: 153). Because giant corporations were considered to be the engine of growth and innovation, Servan-Schreiber advocated the “creation of large industrial units which are able both in size and management to compete with the American giants” (1968: 159). According to Servan-Schreiber (1968: 159), “The first problem of an industrial policy for Europe consists in choosing 50 to 100 firms which, once they are large enough, would be the most likely to become world leaders of modern technology in their fields. At the moment we are simply letting industry be gradually destroyed by the superior power of American corporations.” Ironically, the 1988 Cecchini Report identified the gains from European integration as largely accruing from increases in scale economies.

Public policy towards SMEs was oriented towards preserving what was considered to be inefficient enterprises, which, if left unprotected, might otherwise become extinct. Preservationist policies were clearly at work in the creation of the U.S. Small Business Administration. In the Small Business Act of July 10, 1953, Congress authorized the creation of the Small Business Administration, with an explicit mandate to “aid, counsel, assist and protect...the interests of small business concerns.”<sup>2</sup> The Small Business Act was clearly an attempt by the Congress to halt the continued disappearance of small businesses and to preserve their role in the U.S. economy.

By contrast, entrepreneurship policy is a relatively new phenomenon. An important distinction should be made between the traditional SME (small business) policies and entrepreneurship policies. SME policy typically refers to policies implemented by a ministry or government agency charged with the mandate to promote SMEs. The actual definition of SMEs varies considerably across countries, ranging from enterprises with fewer than 500 employees in some of the most developed countries, such as the United States and Canada, to fewer than 250 employees in the European Union, to 50 employees in many developing countries. The actual SME policy takes the existing enterprises within the appropriate size class as exogenous, or given, and then develops instruments to promote the viability of those

enterprises. Thus, SME policy is almost exclusively targeted towards the existing stock of enterprises and virtually all of the instruments included in the policy portfolio are designed to promote the viability of the SMEs.

By contrast, entrepreneurship policy has a much broader focus. The definition introduced by Lundstrom and Stevenson (2001: 19) for OECD countries is certainly applicable in the context of the European Union, "Entrepreneurship policy consists of measures taken to stimulate more entrepreneurial behavior in a region or country... We define entrepreneurship policy as those measures intended to directly influence the level of entrepreneurial vitality in a country or a region."

There are at least two important ways that distinguish entrepreneurship policy from SME policy (Lundstrom and Stevenson 2002). The first is the breadth of policy orientation and instruments. While SME policy has a focus on the existing stock of SMEs, entrepreneurship policy is more encompassing in that it includes potential entrepreneurs as well as the existing stock of SMEs. This suggests that entrepreneurship policy is more focused on the process of change, regardless of the organizational unit, whereas SME policy is focused exclusively on the enterprise level. Entrepreneurship policy also has a greater sensitivity to framework or environmental conditions that shape the decision-making process of entrepreneurs. While SME policy is primarily concerned with one organizational level – the enterprise, entrepreneurship policy encompasses multiple units of organization and analysis. These range from the individual to the enterprise, and to the cluster or network, which might involve an industry or sectoral dimension, or a spatial dimension, such as a district, city, region, or even an entire country. Just as each of these levels is an important target for policy, the interactions and linkages across these disparate levels are also important. In this sense, entrepreneurship policy tends to be more systemic than SME policy. However, it is important to emphasize that SME policy still remains at the core of entrepreneurship policy.

The second way distinguishing entrepreneurship policy from traditional SME policy is that virtually every country has a ministry or governmental agency charged with promoting the viability of the SME sector. These ministries and agencies have by now developed a well established arsenal of policy instruments to promote SMEs. However, no such agencies exist to promote entrepreneurship. Part of the challenge of implementing entrepreneurship policy is that no country has yet to introduce an agency mandated with the charge of promoting entrepreneurship. Rather, aspects relevant to entrepreneurship policy can be found across a broad spectrum of ministries and agencies, ranging from education to trade and immigration. Thus, while SMEs have agencies and ministries that champion their issues, no analogous agency exists for entrepreneurship policy.

Just because entrepreneurship is positively linked to performance does not automatically justify public policy intervention. Rather, the mandate for

public policy intervention is the result of three fundamental sources of market failure – network externalities, knowledge externalities, and learning externalities.

Network externalities result from the value of an individual's or firm's capabilities being conditional upon the geographic proximity of complementary firms and individuals. As Porter (2000) pointed out, local proximity is essential for accessing these knowledge spillovers. This makes the value of an entrepreneurial firm greater in the (local) presence of other entrepreneurial firms. The value of any individuals or firms capabilities is therefore conditional upon the existence of partners in a network. Firms and workers place a greater value on locations within clusters which contain complementary workers and firms than on those outside of clusters. Such market failure can occur where there is a potential for geographic clustering, sectoral linkages, or networks.

The second source of market failure involves knowledge externalities. As Arrow (1962) documented, knowledge, which involves new ideas, is inherently a public good, so that its production generates externalities. However, as Porter (2000) pointed out, local proximity is essential for accessing these knowledge spillovers.

The second source of market failure emanating from entrepreneurship is that positive economic value for third-party firms and individuals is created even in entrepreneurial firms that fail. The high failure rate of new-firm startups has been widely documented and described above in this paper, and the failure rates in knowledge-based activities are especially great. This is not surprising since knowledge activities are associated with a greater degree of uncertainty. However, the failure of a knowledge-based firm does not imply no value was created by the firm; evidence suggests that ideas created by failed firms and projects often become integral parts of successful products and projects in successful firms.

The externalities sometimes associated with failed firms, also creates a market failure in the valuation of (potential) new enterprises by private investors and policy makers. Whereas the private investor can only appropriate her investment if the particular firm succeeds, a failed firm that generates positive externalities contributes to the success of other third-party firms. The private investor, however, does not appropriate anything from the original investment. Likewise, individual firms and workers would have no incentive to invest in the development of a cluster, which is the creation of other entrepreneurial firms, due to their inability to appropriate returns from such a cluster.

From the public policy perspective, on the other hand, it does not matter which firm succeeds, as long as some firm(s) do, and growth, along with the other benefits accruing from entrepreneurship, is generated for the locale.

The third source of market failure involves the learning or demonstration effect emanating from entrepreneurial activity. This is

particularly valuable in regions where entrepreneurship has been noticeably absent and no strong entrepreneurial traditions exist. Entrepreneurial activity involves not just the firm or individual responsible. Rather, others will observe this activity and the results of entrepreneurship. Other people will learn that entrepreneurship is a viable alternative to the status quo. As a result of this demonstration effect, others will be induced to also develop entrepreneurial strategies. Thus, there is a strong and compelling positive externality associated with entrepreneurship, particularly in areas with no strong entrepreneurial traditions.

Thus, the market failures inherent in entrepreneurship – network externalities, knowledge externalities and demonstration or learning externalities – result in a gap in the valuation of entrepreneurial activities between private parties and the local public policy makers. Entrepreneurial activity, combined with the propensity for knowledge to remain localized, results in a new policy mandate for cities, regions, provinces and countries. It also results in a fundamental mandate for the role to serve as a partner to business, enabling and fostering the development of new and small entrepreneurial firms. By filling these gaps left by market failure, public policy can create a virtuous entrepreneurial circle, where entrepreneurs become networked and linked to each other, and strong role models of entrepreneurship exist for others to emulate.

As the comparative advantage has become increasingly based on new knowledge, public policy has responded in two fundamental ways. The first has been to shift the policy focus away from the traditional triad of policy instruments essentially constraining the freedom of firms to contract – regulation, competition policy or antitrust in the U.S., and public ownership of business. The policy approach of constraint was sensible as long as the major issue was how to restrain large corporations in possession of considerable market power. That this policy is less relevant in a global economy is reflected by the waves of deregulation and privatization throughout Europe and North America. Instead, a new policy approach is emerging which focuses on enabling the creation and commercialization of knowledge. Examples of such policies include encouraging R&D, venture capital and new-firm startups.

While the different types of entrepreneurship policies being implemented in the EU and US are too numerous to be identified and listed here, David Storey (2003) has identified examples of different types of entrepreneurship policies being undertaken in the EU and the U.S. In addition, he provides an assessment of the efficacy of the various types of policies undertaken. Illustrations of these policies are provided in table 2.2.

The policy shift to enabling the creation and viability of knowledge-based entrepreneurial firms is evidenced by passage by the United States Congress of the Small Business Innovation Research (SBIR) program in the early 1980s. Enactment of the SBIR was a response to the loss of American

competitiveness in global markets. Congress mandated each federal agency with allocating around four percent of its annual budget to funding innovative small firms as a mechanism for restoring American international competitiveness (Wessner 2000). The SBIR provides a mandate to the major R&D agencies in the United States to allocate a share of the research budget to innovative small firms. In 2001 the SBIR program amounted to around \$1.4 billion. The SBIR consists of three phases. Phase I is oriented towards determining the scientific and technical merit along with the feasibility of a proposed research idea. A Phase I award provides an opportunity for a small business to establish the feasibility and technical merit of a proposed innovation. The duration of the award is six months and can not exceed \$70,000. Phase II extends the technological idea and emphasizes commercialization. A Phase II Award is granted to only the most promising of the Phase I projects based on scientific/technical merit, the expected value to the funding agency, company capability and commercial potential. The duration of the award is a maximum of 24 months and generally does not exceed \$600,000. Approximately 40 percent of the Phase I Awards continue on to Phase II. Phase III involves additional private funding for the commercial application of a technology. A Phase III Award is for the infusion and use of a product into the commercial market. Private sector investment, in various forms, is typically present in Phase III. Under the Small Business Research and Development Enhancement Act of 1992, funding in Phase I was increased to \$100,000, and in Phase II to \$750,000. The SBIR represents about 60 percent of all public entrepreneurial finance programs. Taken together, the public small-business finance is about two-thirds as large as private venture capital. In 1995, the sum of equity financing provided through and guaranteed by public programs financing SMEs was \$2.4 billion, which amounted to more than 60 percent of the total funding disbursed by traditional venture funds in that year. Equally as important, the emphasis on SBIR and most public funds is on early stage finance, which is generally ignored by private venture capital. Some of the most innovative American companies received early stage finance from SBIR, including Apple Computer, Chiron, Compaq and Intel.

There is compelling evidence that the SBIR program has had a positive impact on economic performance in the U.S. (Wessner 2000; Lerner 1999). The benefits have been documented as:

- The survival and growth rates of SBIR recipients have exceeded those of firms not receiving SBIR funding
- The SBIR induces scientists involved in biomedical research to change their career path. By applying the scientific knowledge to commercialization, these scientists shift their career trajectories away from basic research towards entrepreneurship.

Tab. 2. 2: Illustrations of entrepreneurship policies

Problem	Programme	Description	Country	Success
Access to Loan Finance	Loan Guarantee Scheme	SMEs without access to own collateral obtain access to bank loans by state acting as guarantor	UK, USA, Canada France Netherlands	Yes, generally viewed as helpful, but small scale impact on the overall financing of SMEs in most countries
Access to Equity Capital	Enterprise Investment Scheme	Tax breaks for wealthy individuals to become business angels	UK	Unknown
Access to Markets	Europartentariat	Organisation of Trade Fairs to encourage cross-border trade between SMEs	EU	General satisfaction amongst firms that participated
Administrative Burdens	Units established within government to seek to minimise administrative burdens on smaller firms	Sunsetting Legislation deregulation Units	Netherlands Portugal, UK	The view of small firms themselves is that bureaucratic burdens have increased markedly in recent years
Science Parks	Property based developments adjacent to Universities	Seek to promote clusters of new technology based firms	UK, France, Italy and Sweden	Conflicting findings on impact of SPs on performance of firms
Managed Workspace	Property provision to assist new and very small firms	Often called business incubators, these provide premises for new and small firms on "easy- terms"	World-wide	General recognition that such initiatives are of value
Stimulating Innovation and R&D in small firms	Small Business Innovation Research Program	\$1 billion per year is allocated via a competition to small firms to stimulate additional R&D activity	USA	Lerner implies SBIR enhances small firm performance, but Waisstien is unable to show it leads to additional R&D
Stimulating Training in small firms	Japan Small Business Corporation (JSBC)	JSBC and local governments provide training for owners and managers of small firms. The training programme began in 1963	Japan	Unknown
Entrepreneurial Skills	Small Business Development Corporations (SBDCs)	Counselling is provided by SBDC mentors to small business clients who may be starting a business or be already trading	USA	This study finds SBDC clients have higher rates of survival and growth than might be expected. Reservations over these findings are found in the text
Entrepreneurial Awareness	Entrepreneurship Education	To develop an awareness of enterprise and/or an entrepreneurial spirit in society by incorporating enterprise into the school and college curriculum	Australia, Netherlands, but leading area was Atlantic Canada	Conventional assessments are particularly difficult here because of the long "lead times"
Special Groups	Law 44	Provides finance and mentoring advice to young people in Southern Italy, where enterprise creation rates were very low	Southern Italy	This is an expensive programme, but most studies show the survival rates of assisted firms to be well above those of "spontaneous" firms

Source: Table taken (modified) from Storey (2003)



Whilst informal institutions are the culturally accepted basis legitimating entrepreneurship, the formal institutions contribute the regulatory frame (Wade-Benzoni et al. 2002). In other words, formal institutions provide the regulatory frame for entrepreneurship, thus creating opportunity fields for entrepreneurship, and informal institutions, which legitimate entrepreneurship in a society, determine the collective and individual perceptions of entrepreneurial opportunities (Welter and Smallbone 2003).

However, a clear-cut distinction between formal and informal institutions is difficult to achieve. Both informal and formal institutions are mutually dependent, whilst mental perceptions of individuals and informal institutions co-evolve. Partly, informal institutions result from formal institutions, which they in turn (could) modify. In this regard, they evolve as a culture-specific interpretation of formal rules. For example, whilst each legal framework normally contains explicit regulations for implementing laws<sup>7</sup>, over time these regulations are complemented by an implicit understanding of their content. This refers to unwritten rules, i.e., informal institutions fill in legal gaps which become apparent only through applying laws and regulations to daily life. In addition, informal institutions also contribute to the enforcement of the formal framework. Although legal sanctions such as penalties for unlawful behavior play an important role in implementing new rules of the game, these means are far from being sufficient. In this context, North (1990) himself states that “we need to know much more about culturally derived norms of behavior and how they interact with formal rules to get better answers...”.

Fundamental *formal or regulative institutions* such as private property rights are a major influence on the existence of entrepreneurship whilst the legal frame determines its nature and extent. This refers to laws relating to bankruptcy, contracts, commercial activities, taxes, but it also involves organizations with the capacity to implement them. Laws might create new opportunity fields for entrepreneurship. For example, in Germany the introduction of rules for environmental protection fostered venture creation in recycling industries. Other key institutions include the financial system or sectors in the sense of sector specific technological standards. Here, technological progress allows for customized mass production, thus creating new market opportunities in sectors, which were previously dominated by economies of scales and scope and consequently larger enterprise sizes.

*Normative and cultural-cognitive* elements of institutions reflect what North labels *informal institutions*. Normative elements are apparent on different levels: on the level of society, where norms and values determine the appropriateness of entrepreneurship, on the level of sectors, where normative institutions are reflected in codes of conduct as set down by business associations and professions, and on the level of communities such as religious, kinship or ethnic groups. Normative elements contain the

new startups and potential sources of finance. The Edison Centers in particular, try to link the leading universities and medical institutions, businesses, foundations, to civic and state organizations in Ohio in order to create new business opportunities. Numerous centers exist across the state. Similarly, the Edison Program has established a bridging institution to support polymer research and technology in Ohio. Carlsson and Brunerhjelm (1999) credit the program for the startup of new high technology firms in Ohio.

Other examples of enabling policies are evidenced by the plethora of science, technology and research parks. Lugar and Goldstein (1991) conducted a review of research parks and concluded that such parks are created in order to promote the competitiveness of a particular region. Lugar (2001: 47) further noted that, "The most successful parks...have a profound impact on a region and its competitiveness." A distinct exemplar of this effect is found in the Research Triangle Park in North Carolina.

The traditional industries in North Carolina – furniture, textiles, and tobacco – had all lost international competitiveness, resulting in declines in employment and stagnated real incomes. In 1952, only Arkansas and Mississippi had lower per capita incomes. According to Link and Scott (forthcoming: 2), a movement emerged to use the rich knowledge base of the region, formed by the three major universities – Duke University, University of North Carolina-Chapel Hill and North Carolina State. This movement, though it initially consisted only of businessmen looking to improve industrial growth, ultimately fell into the hands of the Governor's office which supported the efforts through fruition (Link 1995). Empirical evidence provides strong support that the initiative creating Research Triangle has led to fundamental changes in the region. Link and Scott (forthcoming), document the growth in the number of research companies in the Research Triangle Park as increasing from none in 1958 to 50 by the mid-1980s and to over 100 by 1997. At the same time, employment in these research companies increased from zero in the late 1950s to over 40,000 by 1997. Lugar (2001) attributes the Research Triangle Park with directly and indirectly generating one-quarter of all jobs in the region between 1959 and 1990, and shifting the nature of those jobs towards high value-add knowledge activities.

Such enabling policies are not restricted to the U.S. One of the most interesting examples of the new enabling entrepreneurship policy involves the establishment of five EXIST regions in Germany, where startups from universities and government research laboratories are encouraged (BMBF 2000). The program has the explicit goals of (1) creating an entrepreneurial culture, (2) the commercialization of scientific knowledge, and (3) increasing the number of innovative start-ups and SMEs. Five regions were selected among many applicants for START funding. These are the (1)

Rhein-Ruhr region (bizeps program), (2) Dresden (Dresden exists), (3) *Thüringen* (GET UP), (4) Karlsruhe (KEIM), and (5) Stuttgart (PUSH!).

These programs promoting entrepreneurship in a regional context are typical of the new enabling policies to promote entrepreneurial activity. While these entrepreneurial policies are clearly evolving, they are clearly gaining in importance and impact in the overall portfolio of economic policy instruments.

## 5. CONCLUSIONS

Globalization has shifted the comparative advantage in the OECD countries away from being based on traditional inputs of production, such as land, labor and capital, towards knowledge. This has triggered a divergence between the competitiveness of firms and the competitiveness of locations. As the strategic management of firms dictated a response to globalization of outward foreign direct investment combined with employment downsizing at high cost locations, public policy has responded by developing the strategic management of places. Policy to promote entrepreneurship has emerged as playing a central role in the strategic management of places, because entrepreneurial activity is the conduit between investments in knowledge and economic growth at the particular location. However, due to the two sources of market failure associated with investments in knowledge and entrepreneurial activity identified in this paper, private agents will tend to under invest in entrepreneurial activity. A major goal of the strategic management of places is to pursue policies that will compensate for this market failure by promoting knowledge-based entrepreneurship as a vehicle for the employment growth and global competitiveness.

## NOTES

<sup>1</sup> As the German newspaper, *Die Zeit* (2 February 1996: 1) pointed out in a front page article, “When Profits Lead to Ruin – More Profits and More Unemployment: Where is the Social Responsibility of the Firms?” the German public has responded to the recent waves of corporate downsizing with accusations that corporate Germany is no longer fulfilling its share of the social contract.

<sup>2</sup> <http://www.sba.gov/aboutsba/sbahistory.html>.

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